

09/828,863
F-11090

AMENDMENTS TO THE CLAIMS:

1 ¹17. (Currently Amended) A liquid crystal display device, comprising:

2 a light shielding film formed on a pixel board;

3 a first insulating film formed on said light shielding film;

4 a semiconductor layer formed on said first insulating film;

5 a second insulating film, serving as a gate insulating film, formed on said
6 semiconductor layer and said first insulating film; and

7 a gate line formed on said second insulating film,

8 wherein said semiconductor layer comprises a source region, a drain region, a
9 channel region and a lightly doped drain (LDD) region; and
10 contact holes for connecting said gate line with said light shielding film that are
11 formed on opposing sides of said channel region and said LDD region,

12 wherein a part of said gate line is filled up in said contact holes, and ~~lengths~~
13 long sides of said contact holes ~~are provided as at least~~ have a length equal to or
14 greater than a total length of a long side of said channel region and said LDD region.

2,
18.

1 (Currently Amended) A liquid crystal display device, comprising:

2 a light shielding film formed on a pixel board;

3 a first insulating film formed on said light shielding film;

4 a semiconductor layer formed on said first insulating film;

5 a second insulating film, serving as a gate insulating film, formed on said

6 semiconductor layer and said first insulating film; and

3

09/828,863

F-11090

7 a gate line formed on said second insulating film,
8 wherein said semiconductor layer comprises a source region, a drain region, a
9 channel region and a lightly doped drain (LDD) region; and
10 contact holes for connecting said gate line with said light shielding film that are
11 formed on opposing sides of said LDD region,

12 wherein a part of said gate line is filled up in said contact holes, and ~~lengths~~
13 long sides of said contact holes are provided as at least have a length equal to or
14 greater than a length of a long side of said LDD region.

3.
19. (Previously Entered) The liquid crystal display device as claimed in claim 17, wherein
at least said channel region is covered with said contact holes, said gate line, and said
light shielding film.

4.
20. (Previously Entered) The liquid crystal display device as claimed in claim 17, wherein
said LDD region is covered with said contact holes and said light shielding film.

5.
21. (Previously Entered) The liquid crystal display device as claimed in claim 18, wherein
said LDD region is covered with said contact holes and said light shielding film.

6.
22. (Previously Entered) The liquid crystal display device as claimed in claim 17,
wherein said light shielding film comprises a conductive material.

7.
23. (Previously Entered) The liquid crystal display device as claimed in claim 18,

4

09/828,863

F-11090

wherein said light shielding film comprises a conductive material.

6.
24. (Previously Entered) The liquid crystal display device as claimed in claim 1, wherein said light shielding film comprises a heat-resistant material.

9.
25. (Previously Entered) The liquid crystal display device as claimed in claim 18, wherein said light shielding film comprises a heat-resistant material.

10.
26. (Currently Amended) The liquid crystal display device as claimed in claim 1, wherein ~~the thickness of~~ said first insulating film has a thickness ~~the same as a thickness of~~ said such that the light shielding film ~~that~~ does not function as a back gate of a thin film transistor.

11.
27. (Currently Amended) The liquid crystal display device as claimed in claim 18, wherein ~~the thickness of~~ said first insulating film has a thickness ~~the same as a thickness of~~ said such that the light shielding film ~~that~~ does not function as a back gate of a thin film transistor.

12.
28. (Currently Amended) The liquid crystal display device as claimed in claim 1, further comprising:

a third insulating film formed on said gate line; and

a data line formed on said third insulating film,

wherein ~~another~~ a set of light shield contact holes for connecting said gate line

5

09/828,863
F-11090

~~with said light shielding film~~ is formed below said data line.

13.

~~29.~~ (Currently Amended) The liquid crystal display device as claimed in claim ~~18.~~ ^{2.} further comprising:

a third insulating film formed on said gate line; and

a data line formed on said third insulating film,

wherein ~~another~~ a set of light shield contact holes for ~~connecting said gate line~~
~~with said light shielding film~~ is formed below said data line.

14.

~~30.~~ (Previously Entered) The liquid crystal display device as claimed in claim ~~17.~~ ^{1.} wherein distal ends of the length of each contact hole extend proximate to distal ends of the total length of said channel region and said LDD region.

15.

~~31.~~ (Previously Entered) The liquid crystal display device as claimed in claim ~~20.~~ ^{14.} wherein the distal ends of the length of each contact hole extend beyond the distal ends of the total length of said channel region and said LDD region.

16.

~~32.~~ (Previously Entered) The liquid crystal display device as claimed in claim ~~18.~~ ^{2.} wherein distal ends of the length of each contact hole extend proximate to distal ends of the length of said LDD region.

17.

~~33.~~ (Previously Entered) The liquid crystal display device as claimed in claim ~~32.~~ ^{16.} wherein the distal ends of the length of each contact holed extend beyond the distal ends of the length

6

09/828,863

F-11090

of said LDD region.

18'

34.

(Currently Amended) A liquid crystal projector apparatus, comprising:

a liquid crystal display device including:

a light shielding film formed on a pixel board;

a first insulating film formed on said light shielding film;

a semiconductor layer formed on said first insulating film;

a second insulating film, serving as a gate insulating film, formed on said semiconductor layer and said first insulating film; and

a gate line formed on said second insulating film,

wherein said semiconductor layer comprises a source region, a drain region, a channel region and a lightly doped drain (LDD) region; and contact holes for connecting said gate line with said light shielding film that are formed on opposing sides of said channel region and said LDD region,

wherein a part of said gate line is filled up in said contact holes, and ~~lengths long sides~~ of said contact holes ~~are provided as at least~~ have a length equal to or greater than a total length of a long side of said channel region and said LDD region;

a light source for irradiating light to said liquid crystal display device;

an optical system for guiding the light from said light source to said liquid crystal display device; and

an optical system for projecting information light from said liquid crystal display device.

7

09/828,863
F-11090

19.

36.

(Currently Amended) A liquid crystal projector apparatus, comprising:

a liquid crystal display device including:

a light shielding film formed on a pixel board;

a first insulating film formed on said light shielding film;

a semiconductor layer formed on said first insulating film;

a second insulating film, serving as a gate insulating film, formed on said semiconductor layer and said first insulating film; and

a gate line formed on said second insulating film;

wherein said semiconductor layer comprises a source region, a drain region, a channel region and a lightly doped drain (LDD) region; and contact holes for connecting said gate line with said light shielding film that are formed on opposing sides of said LDD region,

wherein a part of said gate line is filled up in said contact holes, and ~~lengths~~ long sides of said contact holes ~~are provided as at least have a length~~ equal to or greater than a length of a long side of said LDD region;

a light source for irradiating light to said liquid crystal display device;

an optical system for guiding the light from said light source to said liquid crystal display device; and

an optical system for projecting information light from said liquid crystal display device.